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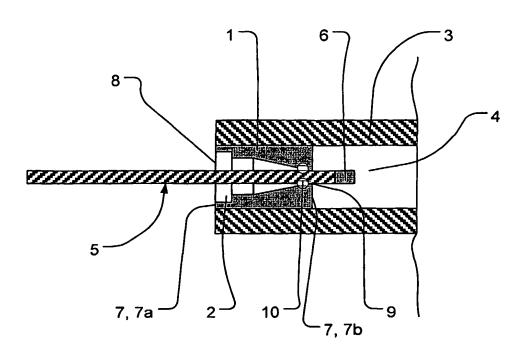
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[Continued on next page]

(54) Title: CREVICE-LESS END CLOSURE MEMBER COMPRISING A FEED-THROUGH



(57) Abstract: The present invention relates to an end closure member (1) with at least one feed-through (5), whereby the end closure member (1) has at least one through-going feed-through opening (2) and whereby the through-going feed-through opening (2) cross-section varies along the end closure member (1) in a longitudinal direction.



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#### B. FIELDS SEARCHED

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

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Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/070668 A1 (LEVIS MAURICE E ET AL) 13 June 2002 (2002-06-13) paragraphs '0002!, '0033! - '0041!; figures 2B,8A,8B	1,2,4-10
Х	EP 1 043 754 A (USHIO ELECTRIC INC) 11 October 2000 (2000-10-11)	1-4,6-8
A	paragraphs '0024! - '0028!; figure 2a2d	9,10
X	US 4 803 403 A (FRYBURG GEORGE A ET AL) 7 February 1989 (1989-02-07) column 2, line 31 - line 42; figure 3	1,10
X	US 4 019 078 A (BURGESS NORMAN) 19 April 1977 (1977-04-19) figure 1	1-4,6
1	 -/	

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Name and mailing address of the ISA  European Patent Office, P.B. 5818 Patentlaan 2  NL – 2280 HV Rijswljk  Tel. (+31–70) 340–2040, Tx. 31 651 epo nl,  Fax: (+31–70) 340–3016	Authorized officer  Zuccatti, S

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Int anal Application No
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C.(Continua	ation) DOCUMENTS CONS ED TO BE RELEVANT	03/05185
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
K	US 5 404 077 A (EICHELBROENNER GOTTFRIED ET AL) 4 April 1995 (1995-04-04) figures 6-9	1,6
x	US 5 424 608 A (JUENGST STEFAN ET AL) 13 June 1995 (1995-06-13) figures 2,3	1,6
x	US 5 742 123 A (NAGAYAMA HIROYUKI)	1
Y	21 April 1998 (1998-04-21) column 24, line 5 - line 9; figures 18,19	1,10
Y	US 6 194 832 B1 (JUENGST STEFAN) 27 February 2001 (2001-02-27) figures 2-5	1,10
x	US 5 286 227 A (NUMAJIRI YASUYOSHI ET AL)	1-7
A	15 February 1994 (1994-02-15) column 3, line 60 - column 4, line 6; figure 3	8
(	GB 744 184 A (DEREK CHARLES PEACH; GEN	1
,	ELECTRIC CO LTD) 1 February 1956 (1956-02-01)	
,	figure 1	8
	DE 199 21 862 A (PATRA PATENT TREUHAND) 16 November 2000 (2000-11-16) column 3, line 24 - line 40; figure 1	10

#### INTERNATIONAL SEARCH REPORT

Form PCT/ISA/210 (patent family annex) (January 2004)

PCT 03/05185 Patent document Publication Patent family Publication cited in search report date member(s) date US 2002070668 A1 13-06-2002 US 2003034736 A1 20-02-2003 US 6414436 B1 02-07-2002 US 2003052609 A1 20-03-2003 US 2004036393 A1 26-02-2004 WO 03030212 A1 10-04-2003 US 2004056593 A1 25-03-2004 EP 1043754 Α 11-10-2000 EP 1043754 A1 11-10-2000 JP 3346372 B2 18-11-2002 JP 2001006618 A 12-01-2001 US 4803403 Α 07-02-1989 CA 1246654 A1 13-12-1988 EP 0136564 A2 10-04-1985 JP 60059352 U 25-04-1985 US 4019078 Α 19-04-1977 GB 1475093 A 01-06-1977 CA 1046573 A1 16-01-1979 DE 2548301 A1 06-05-1976 FR 2290030 A1 28-05-1976 JΡ 51067680 A 11-06-1976 NL 7512032 A ,B, 04-05-1976 US 5404077 04-04-1995 Α DE 4127555 A1 25-02-1993 CN 1071534 A 28-04-1993 59202389 D1 DE 06-07-1995 EP 0528427 A1 24-02-1993 JP 5205701 A 13-08-1993 US 5424608 Α 13-06-1995 DE 9206727 U1 16-07-1992 DE 59303540 D1 02-10-1996 EP 0570772 A1 24-11-1993 JP 5094945 U 24-12-1993 US 5742123 Α 21-04-1998 AU 4514593 A 31-01-1994 2139839 A1 CA 20-01-1994 DE 69331991 D1 11-07-2002 DE 69331991 T2 19-09-2002 EP 0650184 A1 26-04-1995 WO 9401884 A1 20-01-1994 JP 3456212 B2 14-10-2003 JP 3225962 B2 05-11-2001 JP 2001035444 A 09-02-2001 JP 3225963 B2 05-11-2001 JP 2001035445 A 09-02-2001 US 6194832 **B1** 27-02-2001 DE 19727428 A1 07-01-1999 AT 233018 T 15-03-2003 CA 2241656 A1 27-12-1998 DE 59807230 D1 27-03-2003 EP 0887840 A2 30-12-1998 HU 9801468 A2 28-01-1999 JP 11073919 A 16-03-1999 US 5286227 Α 15-02-1994 JP 5174785 A 13-07-1993 GB 744184 Α 01-02-1956 NONE DE 19921862 Α 16-11-2000 DE 19921862 A1 16-11-2000

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